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Locational Distribution of Foreign Banks in China: A Disaggregated Analysis

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Locational Distribution of Foreign Banks in China: A Disaggregated Analysis[1]

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Abstract

This paper examines two major propositions about the location choices made by foreign banks of different organizational form and size in China: foreign banks could follow the competitors and customers, and/or pursue first-mover cities and local currency banking in their location choices. Results from the conditional logit models suggest different types of foreign banking institutions display distinctive location patterns. Smaller foreign banks tend to pursue the 'follow the customer' strategy, while larger banks are likely to use the 'follow the competitor' strategy in China. The agglomeration effect is more important than the first-mover cities as a determinant of the location choices make by foreign banks in China. This finding could be partially explained by the location-bounded institutional variables which are unable to be fully reconciled with the recent deregulation policies.

摘要：本文目的是检验两个关于不同类型和不同规模的外资银行在华区位选择的假说，即外资银行跟随竞争者和客户或者集聚于先行城市和对外资银行管制较少的城市。条件逻辑模型显示不同类型的外资银行的区位模式存在显著差异。小银行倾向于追随客户而大银行则更多地追随竞争者布局中国。集聚效应对于外资银行区位选择而言较城市先行者优势更为重要，这可能与区位特定的制度变量有关。

Key Words: Foreign Banks, Location Choices, Conditional Logit Model, China

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Locational Distribution of Foreign Banks in China: A Disaggregated Analysis

INTRODUCTION

To prepare for accession to the World Trade Organization (WTO), China has accelerated the pace of liberalization in the banking industry by gradually lifting its geographical and customer restrictions on foreign banks since the late 1990s. The rapidly growing economy together with the deregulation of the banking sector has motivated multinational banks to establish branches in China. By 2007, 193 banks based in 47 countries or regions had 242 representative offices in China, 24 wholly foreign-owned banks had 119 branches, 2 joint venture banks had 5 branches and there were 3 wholly foreign-owned financial companies. Foreign banks' total assets amounted to RMB1,253 billion in 2007, accounting for 2.38 percent of China's total banking assets (CBRC, 2008).

Another aspect of the major deregulation policies in China's banking industry is the introduction of foreign strategic investors. According to the China Banking Regulatory Commission (CBRC) in 2007, about 30 foreign banking institutions had acquired stakes in 21 Chinese commercial banks through strategic investment agreements by 2006. These foreign banking institutions originate from a variety of countries or regions, including the United States (US), Japan, Singapore, Germany, Hong Kong, France, Australia, and international institutions such as the Asian Development Bank (ADB) and International Finance Corporation (IFC). Foreign participation offers domestic banks the prospect of improved management practices, attractive opportunities for business cooperation, enhancement of their reputation in capital markets, and injections of equity capital (HOPE and HU, 2006; LENG, 2006).

Studies of foreign banking have been flourishing since the 1980s, with the focus on international banking in developed economies including the US, Europe and Japan, and the determinants of the size of foreign bank presence in host countries (ALIBER, 1984; CHO, 1985; HULTMAN and MCGEE, 1989; GOLDBERG and JOHNSON, 1990; WILLIAMS, 1997, 2002). The expansion of international banking in China has triggered a series of research projects into foreign banking activities. Existing studies, however, target the expansion of foreign banks in China as a whole or in a particular city, e.g., LEUNG (1997), LEUNG and YOUNG (2005), LU and DEWHURST (2007), etc. LEUNG and YOUNG (2002) and BONIN and HUANG (2002) examined the implications of China's accession to the WTO for foreign and domestic banks, respectively. ZHANG and YANG (2007) examined the distribution of foreign banks in 16 Chinese cities by 2006 and found as they predicted, that international trade and per capita income was significant in determining the location of foreign banks in China.

The current literature, however, is unable to explain the potential influence of the institutional environment (especially the formal structures of rules and regulations stipulated by the CBRC) on the location choices made by foreign banks in China. Foreign banking institutions in China come from rather diverse backgrounds in terms of their parent banks' sizes and functions. The location of foreign banks may significantly differ according to the specific type of banking institution.

This paper aims to contribute to the existing literature by examining two major propositions concerning the location choices made by foreign banks with different bank assets (small banks versus large banks) and their entry mode choice of organizational form (branches and sub-branches versus representative offices) in the

transitional economy of China. The two propositions are that foreign banks could pursue follow the competitor and customer strategies and/or adopt first-mover cities and local currency banking strategies. The former proposition is derived from Dunning's eclectic paradigm (GRAY and GRAY, 1981; PETROU, 2007) while the two institutional variables – first-mover cities and local currency banking – are used to examine the potential impact of liberalization policies on the location choices of foreign banks in China. There is strong evidence from the conditional logit models to suggest different types of foreign banking institutions display specific location patterns. Smaller foreign banks tend to pursue the 'follow the customer' strategy to lower investment risks and maintain business-client networks in their choice of which Chinese cities to locate in. Foreign banks, especially larger ones, have considerable ownership advantages and tend to mimic the location choices of their major competitors and select cities with large potential banking opportunities. To collect vital and up to date information, foreign banks tend to locate their representative offices in Beijing and Shanghai, with their informational externalities, or other first-mover cities in opening up local currency banking to reap the locational advantages created by the deregulation of the Chinese banking industry.

As a transitional economy, we expect the gradual approach of deregulation implemented by the CBRC to have a significant impact on the location choices made by foreign banks in China. The statistical evidence nonetheless suggests that the potential impact of the institutional environment in the location decisions of foreign banks is not as high as expected: the location choice of foreign banks is more determined by the agglomeration effects generated by their major competitors and the CBRC deregulation policies regarding local currency banking but much less so for the first-mover cities policy *per se*. This finding could be partially explained by limitations to the location-bounded institutional variables. The CBRC's deregulation policies on first-mover cities could have a bigger impact on the scale and pace of foreign banks' investment and the varieties of banking products than the location choices of foreign banks alone. This could be the case as most (coastal) areas that could provide potentially lucrative banking opportunities for profit-oriented foreign banks have been opened up for a long time. The concentration of foreign banks in these first-mover cities thus created further agglomeration effects for the later comers.

Before describing the methodology and data sources, a brief review of the literature and the corresponding six research hypotheses are outlined in the next section. The fourth section describes the entry patterns and location distribution of foreign banks in China. The findings of this paper are then presented and analyzed before the conclusion.

UNDERSTANDING FOREIGN BANKING LOCATIONS

This section discusses the importance of various determinants for the location choices of foreign banks in host countries.

Dunning's eclectic paradigm of international production has been widely applied to explain the locations of the value-added activities of transnational corporations (TNCs) outside their home countries: the location choices of foreign direct investment (FDI) by TNCs are based on a combination of ownership, internalization and locational advantages (see DUNNING, 1979, 1981, 2001). The conventional eclectic paradigm approach (without the institutional elements) is widely used to explain the international expansion of multinational banks (GRAY and GRAY, 1981; YANNOPOULOS, 1983; CHO, 1985; PETROU, 2007).

There have been some additions to the electric paradigm in response to the significant changes in the global economy during the last two decades. In addition to

non-equity alliances or contractual relationships (including outsourcing) (DUNNING, 2001), the importance of social capital, where economic institutions are a manifestation of the underlying values and practices of a given culture (NORTH, 1991), as institutionally related location advantages for TNCs is highlighted by LUNDAN (2003).[2] MAITLAND and NICOLAS (2003) argued that the new institutional economics could resolve the limitations of location-specific ownership advantages implied by the application of the electric paradigm. DOUGLASS NORTH's (1990, 2005) work on the institutional environment – the formal rules (such as laws and regulations) and informal constraints (such as behavioral norms) that could govern the ownership, internalization and locational advantages – was adopted by DUNNING (2006) and further incorporated into the eclectic paradigm by DUNNING and LUNDAN (2008). In the banking industry, for instance, the established code of conduct and corporate culture could be institutional-specific assets and hence part of the ownership advantages of multinational banks in host countries. To facilitate their capital flows, multinational banks also tend to locate in host countries with locationally bounded 'sticky' assets, such as more liberal legal and regulation systems.

Ownership and internalization advantages: follow the competitor or customer

Foreign banks normally possess certain ownership advantages that allow their subsidiaries to compete with domestic banks in host countries (MILLER and PARKHE, 1998). These ownership advantages are assumed to be unique to certain banks of a particular national ownership and could be in the form of spatially transferable tangible and intangible assets, ranging from their capabilities and capacities to offer superior banking products and a unique banking experience for their clients due to their advanced information technologies and managerial skills (ALIBER, 1984; CHO, 1985; YANNOPOULOS, 1983; WILLIAM, 1997). By locating their subsidiaries in major global financial centers, such as London and New York, foreign banks reap the ownership advantages of being able to raise financial capital at lower costs and gain access to specialized services provided by other complementary sectors (JONES, 1993). Ownership advantages may trigger various forms of strategic behavior between foreign banks, which commonly include the follow the leader, 'tit for tat' oligopolistic reaction (KNICKERBOCKER, 1973) and exchange of threats (GRAHAM, 1978). Foreign banks thus mimic each other's investment behavior, including the location of their branches in host countries (ENGWAL and WALLENSTAL, 1998). This 'follow the competitor' strategy is reported by HELLMAN (1994) as the pattern of the international expansion of Swedish and Finnish banks. As China is widely considered a strategic market with high profit margins for multinational banks (TIBG), the major global banks are likely to follow their rivals and set up branches in China to maintain their market coverage.

In addition to ownership advantages, multinational banks possess greater organizational efficiency that allows them to provide cross-border services to their existing clients in host countries (GRAY and GRAY, 1981). Information embodied in clients is difficult to obtain at arm's length due to the asymmetry of information in an imperfect market where face-to-face interactions are vital for deal making. To preserve their established customer networks and their affiliated information, multinational banks have to establish representative offices or branches in host countries to internalize such firm-specific advantages (hence, internalization

[2] DUNNING (2002) highlighted the importance of social relational capital, such as the lack of crime and corruption, in the location decisions of TNCs. Relational assets are the willingness and capacity of persons within a firm to conduct beneficial relations on behalf of that firm, both with other persons within the firm and between themselves and persons in other institutions.

advantages) (JONES, 1993; WILLIAM, 1997; MILLER and PARKHE, 1998; YANNOPOULOS, 1983).[3] The argument for internalization advantages assumes foreign banks implement the 'follow the customer' strategy when investing in host countries (KINDLEBERGER, 1983; WILLIAMS, 1997, 2002).

As more than 190 foreign banks of various sizes have established banking institutions in China, the ownership advantages derived from the size of the bank could have an impact on the choice of location. Major banks wield considerable market power and could raise funds through the capital market for their overseas expansions at lower costs. The size of the bank is an important determinant of foreign banking expansion in Japan and Korea (URSACKI and VERTINSKY, 1992) and smaller firms tend to follow their major competitors to reap the informational externalities (TORRE, 2008). China is not likely to be an exception. The ownership advantages of large foreign banks may trigger following the competitor oligopolistic behavior between rival banks in their location choice in China. With fewer ownership advantages and higher levels of risk aversion, smaller foreign banks may aim to preserve their existing business-client networks in their selection of investment sites. Based on the above discussion, we infer that:

H_1: Larger foreign banks tend to pursue the 'follow the competitor' strategy to lower their investment risks in their location choices of Chinese cities.

H_2: Smaller foreign banks tend to pursue the 'follow the customer' strategy to maintain their business-client networks in their location choices of Chinese cities.

Locational advantages and formal institutional environment in the banking industry

Locational advantages, in the form of both non-transferable tangible and intangible assets specific to a particular area, are vital to the selection of investment sites by foreign banks across and within host countries. Foreign banks normally aim for market penetration when expanding internationally, either by the 'follow the customer' or 'follow the competitor' strategies (YANNOPOULOS, 1983; ALIBER, 1984; CHO, 1985; YAMORI, 1998). Market opportunities are typically defined by the size of the economy or the banking market in host countries. This hypothesis has been widely tested through the location patterns of foreign banks in their host countries. For instance, it is widely reported that the foreign investment of US banks positively correlates with the overseas manufacturing activities established by US-based firms (GOLDBERG and SANDERS, 1981; NIGH *et al*., 1986; HULTMAN and MCGEE, 1989; GOLDBERG and JOHNSON, 1990; GOLDBERG and GROSSE, 1994; MILLER and PARKHE, 1998). ESPERANCA and GULAMHUSSEN (2001) further report that foreign banks in the US follow both their corporate and non-corporate customers and a similar trend was also observed by TICKELL (1994) and YAMORI (1998) in the international expansion of Japanese foreign banks. FOCARELLI and POZZOLO (2001) found that OECD countries with more market opportunities and the potential for a higher level of profitability attract more foreign banks. WELLER and SCHER (2001) confirmed the significance of market size, real economic growth, profit opportunities, and the level of development of domestic banking markets. MAGRI *et al*. (2005) reported that the profit opportunities of the local market in Italy have proved to be of great importance.

In addition to following their clients in the manufacturing sectors, foreign banks follow trading companies with high volumes of transactions in their host countries (GOLDER and SAUNDERS, 1980; GOLDBERG and JOHNSON, 1990; GROSSE and GOLDBERG, 1991; HEINKEL and LEVI, 1992; YAMORI, 1998; BUCH, 2000; MAGRI *et al*., 2005). Studying the pattern of foreign bank offices across 37 home and 82 host

[3] Due to adverse selection, customers with established banking relationships are likely to maintain such relationships with their banks.

countries, BREALEY and KAPLANIS (1996) found a significant relationship between the patterns of bank location, trade and FDI. Foreign banks are found to follow their customers within a host country, e.g., the total value of imports and exports is closely related to the level of foreign banking activity within a particular US state, where the US is the host country (GOLDBERG *et al*., 1989, GOLDBERG and GROSSE, 1994; BAGCHI-SEN, 1995). In China, LEUNG (1997) reported that nearly 92 percent of foreign banks were engaged in trade finance and provided loans to Sino-foreign joint ventures. ZHANG and YANG (2007) examined the distribution of foreign banks in 16 Chinese cities by 2006 and found the international trade and per capita incomes were significant determinants of the location of foreign banks in China.

Furthermore, different types of foreign banking institutions may respond differently to a variety of locational advantages. Foreign banks normally expand their operations in host countries within three organizational forms: subsidiary, branches, or representative office. Multinational banks normally invest heavily in setting up subsidiaries as they are incorporated into the host banking system, while much less investment is required to set up representative offices. As the Chinese government only allowed the incorporation of foreign banks in 2007, the establishment of subsidiaries by multinational banks will not be examined in this paper. Branches and sub-branches conduct various forms of foreign and local currency business, while representative offices aim to collect information and identify possible business opportunities, and provide advisory services to foreign firms in China. Foreign banks may tend to locate their branches in cities with more banking opportunities to enable them to recoup higher levels of investment, while their choices of representative offices may be more sensitive to informational advantages in their selected areas (see CHAMLEY, 2003). As illustrated by the information and communication technology clusters in Silicon Valley (California) and Silicon Sentier (Paris) (VICENTE and SUIRE, 2007), some foreign banks may simply imitate the location choices of other foreign banks to reap the potential benefits of informational externalities (and lower the level of uncertainty) and this could contribute to the agglomeration of foreign banks in certain Chinese cities.[4] The circular causation for agglomerated foreign banks and bankers, which is generated by forward and backward linkages, leads to increasing returns to scale and could be considered by other foreign banks as a locational advantage and thus create an even higher level of spatial agglomeration (see also ROMER, 1986; KRUGMAN, 1991b; FUJTA and THISSE, 1996).[5] Notwithstanding the possibilities of this type of imitation decision by some foreign banks, it is suggested that risk-averse foreign banks tend to locate their representative offices in Chinese cities with informational externalities to better serve their existing clients. Due to the potential size of local markets, it is likely that major cities, such as Beijing and Shanghai, are also agglomerated with foreign banks in other organizational forms. Therefore, we speculate that:

H_3: Foreign banks tend to locate their branches and sub-branches in Chinese cities with more potential banking opportunities.

H_4: Foreign banks tend to locate their representative offices in Chinese cities with informational externalities.

In addition to the 'follow the competitor and customer' strategies, the institutional environment in the banking industry could have a significant impact on the location

[4] This useful point was kindly pointed out by an anonymous reviewer.

[5] Forward linkages are in the form of higher real income through banking jobs (so more bankers are attracted to work in the area) and backward linkages are locational advantages for banks offering an even larger potential market.

choices of multinational banks in host countries. This is especially the case in a liberalizing banking industry, where the scale and pace of institutional evolution is path dependent on the political and socio-economic stability of China (TIBG). As the geographical scale and pace of the liberalization of the Chinese banking industry are largely dictated by the CBRC's policies, it is logical to highlight the formal institutional factors as part of the locationally bounded 'sticky' assets discussed with the locational advantages in this paper. We will not incorporate informal institutions into the model due to the unavailability of data. Deregulation in host countries is a critical factor affecting the location choices of foreign banks. Foreign banks are found to favor locations with fewer restrictions to the entry of foreign banking activities (NIGH *et al*., 1986; FOCARELLI and POZZOLO, 2001; DOPICO and WILCOX, 2002; LENSINK and DE HAAN, 2002; CLARKE *et al*., 2003; HERRERO and PERIA, 2007). NIGH *et al*. (1986) reported that the direct investment of US foreign banks was affected by the openness of developing countries to foreign banking. GOLDBERG and GROSSE (1994) found that foreign banks had a greater presence in US states with fewer regulations on foreign activities. DOPICO and WILCOX (2002) also found that foreign banks tend to have a larger presence in countries which are more open to the foreign ownership of banks.

The Chinese government has gradually lifted its geographical and product restrictions on foreign banks with respect to the WTO accession agreements (see the next section). Foreign banks may not always have full autonomy to establish their branches in ideal locations based on conventional ownership, locational and internalization advantages in China. Foreign banks were actually under severe geographical and product restrictions in China until as recently as 2006, when they were granted full access to the Chinese market as part of the WTO accord. Foreign banks established before WTO accession are expected to prefer first-mover cities, while those set up since 2002 are less likely to confine themselves to those financial centers. As the first-mover cities are largely located in special economic zones with abundant market opportunities (where most foreign investors, especially those originating from Chinese-dominated communities, are also located), it is estimated that a number of foreign banking institutions have established their branches and sub-branches to provide (full) banking services to their clients. After the CBRC started to open up the local currency banking market in the mid-1990s, some (risk-adverse) foreign banks may have established their representative offices in these regions to collect vital market information and to provide basic banking services to their customers. Based on all the above discussion, it is reasonable to deduce that:

H_5: Foreign banks tend to locate their branches and sub-branches in first-mover cities to open up the banking sector and reap the locational advantages created by the deregulation of the Chinese banking industry.

H_6: Foreign banks tend to locate their representative offices in first-mover cities to open up local currency banking and reap the locational advantages created by the deregulation of the Chinese banking industry.

From the above discussion, the location choices of foreign banks could be a contest between the *follow the competitors* and *customers* strategies and the *institutional environment* created by the deregulation policies in China. The following section models the location choices of foreign banks in China using a conditional logit technique.

METHODOLOGY AND DATA SOURCES

Modeling the location distribution of foreign banks in China

In this study, the location choices of foreign banks will be modeled as a conditional logit problem. The conditional logit model (CLM) assumes that foreign banks evaluate all possible city attributes and test individual location possibilities against a set of alternative locations. Foreign banks choose cities with the highest expected profit.

Following MCFADDEN (1974), foreign bank *i* locating in city *j* in year *t* will derive a profit π_{itj}, which is composed of a deterministic and a stochastic term.

$$\pi_{ijt} = \mu_{ijt} + \varepsilon_{ijt} \tag{1}$$

where U_{itj} and ε_{ijt} stand for a deterministic and random term, respectively. Alternative *j* will be preferred by foreign bank *i* if

$$\pi_{ijt} > \pi_{ikt}, k \neq j \tag{2}$$

The stochastic nature of the profit function implies the probability that city *j* is selected by bank *i* equals

$$P_{ijt} = \Pr ob(\pi_{ijt} > \pi_{ikt}), k \neq j \tag{3}$$

It is assumed that the expected profit from city *j* is a function of the observable urban attributes and a random disturbance term.

$$\pi_{ijt} = c + \beta' X_{jt-1} + \varepsilon_{ijt} \tag{4}$$

where *c* is a constant; X_{jt-1} is a vector of the observable city-specific attributes of city *j* in year *t-1* ; β is a vector of the parameters to be estimated; ε_{ijt} is an error item.

Let Y_{it} be a random variable that indicates city *j* has been chosen by bank *i* in year *t*, then the probability of choosing a specific city *j* depends upon the city's attributes relative to the attributes of other cities in the choice set in year *t-1*.[6] Following MCFADDEN (1974), if the disturbance terms are independently distributed and they follow a Weibull distribution, then the probability of locating in city j is given by

$$\Pr ob(Y_i = j) = \frac{\exp(\beta' X_{jt-1})}{\sum_{n=1}^{N} \exp(\beta' X_{jt-1})} \tag{5}$$

Each city chosen in this study is a location of foreign banks. For each foreign banking institution, 1 is assigned to the chosen city and 0 for the other cities. This study includes cities which had allowed foreign banks to conduct local currency business by 2006 and those hosting foreign banking activities by 2006. There are 32 cities in the sample, that is, Beijing, Changchun, Chengdu, Chongqing, Dalian, Dongguan, Fuzhou, Guangzhou, Harbin, Haikou, Hangzhou, Jinan, Kunming, Lanzhou, Nanjing, Nanning, Nantong, Ningbo, Qingdao, Shanghai, Shantou, Shenyang, Shenzhen, Suzhou, Tianjin, Wuhan, Wuxi, Xiamen, Xi'an, Yantai, Yinchuan and Zhuhai.

The CLM assumes the independence of irrelevant alternative (IIA) location choices. By grouping the alternatives into sub-groups that allow the variance to differ across the groups while maintaining the IIA assumptions within the groups, the nested logit model (NLM) is one of the ways to relax the homoscedasticity assumption in the CLM. The NLM, however, is not applicable in this case since each parent bank may not choose the same set of cities for subsequent investment, making the location choices of foreign banks not entirely independent. To control the influence of the interdependency of the previous and new location choices of parent banks in China, we introduce the variable OFB: the number of foreign banking institutions (in the form of branches, sub-branches or representative offices) established by parent banks

[6] We are grateful for valuable advice on this point raised by one of the anonymous referees.

with existing investment in Chinese cities in the previous year.

Other explanatory variables are derived from the six research hypotheses outlined in the previous section, ranging from follow the competitors and customers, business-seeking, information-seeking, first-mover cities-seeking, and local currency business-seeking. To test the 'follow the competitor' hypothesis (H_1), we quantify the location choices of foreign banks through the number of existing foreign banking institutions established by parent banks without pre-existing investment in Chinese cities in the previous year (NFB). The positive significance of NFB indicates that foreign banks follow their competitors in China.

To test the 'follow the customer' hypothesis (H_2), we include a city's volume of international trade (TRADE) and the realized amount of FDI (FDI). Ideally, a city's trade value or the number of foreign enterprises from the same home country for each foreign bank should be incorporated in the testing of the 'follow the customer' hypothesis. The data are, however, not readably available in China. As the second best choice, some empirical studies apply the total volume of trade or total FDI to test the following the customer hypothesis. For instance, GOLDERG and GROSSE (1994) and DOPICO and WILCOX (2002) have found that a country's volume of international trade with other countries is positively associated with the entries of foreign banks. In China, there is evidence showing that Hong Kong-based banks are highly agglomerated in the Pearl River Delta, which is also the location of a large number of foreign-financed enterprises originating from Hong Kong (LEUNG, 1993; JCC). Similar agglomerations of foreign banks and foreign-financed enterprises originating from Japan and the US occur in Beijing and Shanghai (HE, 2003; CHENG and STOUGH, 2006). In the context of China, the positive significance of TRADE and FDI indicates that foreign banks follow their customers in China.

We include the total banking deposits and loans (LOAN) to test the significance of local banking opportunities (H_3). To identify the potential impact of ownership advantages derived from the parent bank's size on the location choice of foreign banks, we divided the data into two panels: the first group includes banks ranked in the top 100 in terms of total assets and the second includes banks ranked outside the top 100 in terms of total assets.

We used two dummy variables to test the significance of informational externalities for the location choices of foreign banks in China (H_4). One stands for the national financial center in China (NFC), assigning 1 for Beijing and Shanghai, and 0 for other cities. The other represents the locations of regional branches of the central bank, the People's Bank of China (PBC), assigning 1 for Tianjin, Shenyang, Nanjing, Jinan, Wuhan, Guangzhou, Chengdu, and Xi'an, and 0 for other cities.

To examine the potential influence of deregulation on foreign banking in China, we introduced two variables to reflect the significant changes to the institutional environment of the Chinese banking industry. They are ACCESS and RMB: the number of years a city had allowed foreign banks to establish business operating entities, and to conduct *Renminbi* business, respectively, when a foreign bank entered the city ($H_{5\text{-}6}$). The explanatory variables are summarized in Table 1.

[insert Tables 1 & 2 about here]

Data sources

Data on foreign banks are from the *Almanac of China's Finance and Banking 2007*. Table 2 summarizes the profiles of foreign banking institutions in China in 2006. Foreign banks have established 548 banking institutions in China, including 240 representative offices, 207 branches, 90 sub-branches and 11 head-offices (which are joint venture banks in China). The top 100 banks had established 274 institutions by

2006, accounting for 50 percent of the total. There are 162 institutions set up by banks from the Great China Diaspora, 237 from banks based in Europe and North America and 149 from other parts of Asia. Among the 548 foreign banking institutions, 303 were established in the pre-WTO period and 245 in the post-WTO period. Data on the explanatory variables come from the *China Urban Statistics Yearbook 2007*, *China Statistical Yearbook 2007*, and *China Import and Export Statistical Yearbook 2006*. Information on ACCESS and RMB is from the *Report on the Opening-Up of the Chinese Banking Sector* (SSB, 2007a-c; CBRC, 2007).

FOREIGN BANKING OPERATIONS IN CHINA

Institutional changes for foreign banking operations

The opening up of the Chinese banking industry can be divided into three stages: (i) 1980-1993, (ii) 1994-2001, and (iii) 2002-present (CBRC, 2007). The first stage (1980-1993) was marked by the establishment of the representative office of the Japan Import and Export bank in Beijing in 1979 (Figure 1 and Table 3). The Nanyang Commercial Bank set up a branch in Shenzhen in 1981, becoming the first foreign bank to conduct business in China since 1949. To further open up the once highly regulated banking market, the Chinese government promulgated the *Regulations on the Administration of Foreign-Funded Banks and Chinese-Foreign Joint Venture Banks in Special Economic Zones* in 1985 (CBRC, 1985). These regulations allow foreign banks to establish branches and conduct foreign currency business in five special economic zones, namely Shenzhen, Zhuhai, Shantou, Xiamen, and Hainan. Facing strict geographical and customer restrictions, foreign banks have tended to establish representative offices to collect information and identify possible investment opportunities in China. The Chinese government has progressively lifted the geographical restrictions on foreign banks by allowing their presence in coastal cities beyond the special economic zones. For instance, the state opened Shanghai to foreign banks in 1990, and another seven cities – Dalian, Tianjin, Qingdao, Nanjing, Ningbo, Fuzhou and Guangzhou – in 1992. Subsequently, more foreign banks have established representative offices and branches in China.

[insert Figure 1 & Tables 3 & 4 about here]

Further relaxation of the geographical and product constraints on foreign banks marked the second stage (1994-2001) of the banking reforms in China. Foreign banks, especially those based in the Hong Kong Special Administrative Region, Japan, the US, Netherlands, Germany, France and Thailand, entered the Chinese market in the early 1990s (Figure 1 and Table 4). This was consistent with the growth pattern of foreign investment. *The Provisional Regulations on Foreign Banking Institutions Renminbi Business on a Trial Basis in Shanghai Pudong Area* was implemented by the CBRC in December 1996. For the first time, the CBRC granted foreign banks access to *Renminbi* (local currency) business for foreign enterprises and overseas residents in China. Shenzhen was selected as the second pilot city to allow foreign banks to conduct *Renminbi* business in 1998. Furthermore, foreign banks based in Shanghai and Shenzhen have been allowed to conduct *Renminbi* businesses in their neighboring provinces of Jiangsu, Zhejiang, Guangdong, Guangxi, and Hunan provinces since 1999. Partly due to the Asian financial crisis of 1997-98, these landmark regulations nonetheless only attracted the establishment of 15 new foreign banking institutions in China between 1998 and 2001 (CBRC, 2007).

Accession to the WTO and the phased-in liberalization of access for foreign banking marked the third stage (2002-now) of foreign bank operations in China. Following accession to the WTO in 2001, China amended or issued a series of laws and regulations regarding foreign banking institutions during the five-year grace

period allowed under the WTO accession agreement (CBRC, 2007). Foreign banks in Shanghai, Shenzhen, Tianjin and Dalian were allowed to conduct *Renminbi* business, which was expanded to foreign banks located in Guangzhou, Zhuhai, Qingdao, Nanjing and Wuhan in 2002 and to those in Jinan, Fuzhou, Chengdu and Chongqing in 2003. Meanwhile, foreign banks were permitted to undertake corporate business in *Renminbi* in these open cities. In December 2003, the CBRC issued the *Administrative Rules Governing the Equity Investment in Chinese Financial Institutions by Overseas Financial Institutions*, setting forth the qualification requirements for overseas investors with respect to their asset size, capital requirement and profit earning capacity as well as the upper limits of such equity investment. In 2004, another five cities – Kunming, Beijing, Xiamen, Shenyang and Xi'an – allowed foreign banks to conduct *Renminbi* business, which was further expanded to Shantou, Ningbo, Harbin, Changchun, Lanzhou, Yinchuan and Nanning in 2005. By December 2006, foreign banks had been permitted to engage in a similar range of financial services to those offered by Chinese banks and were to be treated and regulated in the same way as domestic banks. All non-prudential market access constraints on foreign banks that restricted the ownership, operations and the juridical forms of foreign banking institutions, including those on internal branches and licenses, were lifted by the CBRC. From 2007 onwards, foreign banking operations in China entered a new stage whereby all geographical and customer restrictions on foreign banks were eliminated (JCC & TIBG). The accession to the WTO further opened up the Chinese banking industry to foreign investors, stimulating another expansion drive for foreign banking operations in China (Figure 1 and Tables 3-4).

Entry pattern and the location distribution of foreign banks in China

Foreign banks in China have their headquarters in more than 47 countries or regions, with Hong Kong, Japan and the US at the top of the list (Table 4). There were 127 institutions from Hong Kong, 80 from Japan and 49 from the US, accounting for 47 percent of total foreign banking institutions in China in 2006. South Korea and Singapore are other important investors in the Chinese banking industry. Cultural and geographical proximity may have facilitated the entry of overseas Chinese banks and other Asian banks. Foreign banks from Hong Kong, Singapore, Japan and South Korea may have followed their customers to invest in China. Although most developed countries have established trade or investment linkages with China, these economies are culturally and geographically distant from China and companies based in these countries are likely to keep their original bank-client relationships to save transaction costs.

Foreign banking institutions are highly agglomerated in selected Chinese cities. Shanghai and Beijing are the two most favored locations due to a variety of locational advantages, which may include the strategic nature of the banking market, information externalities and proximity to the central bank, and early openness to foreign banks (Figure 2). Shenzhen and Guangzhou rank in the second tier of cities for attracting foreign banks, followed by Xiamen, Tianjin, Dalian, Qingdao and Suzhou. Foreign banks have also targeted some inland cities including Harbin, Xi'an, Chengdu, Chongqing, Kunming, and Wuhan. Foreign institutions set up by smaller banks are largely concentrated in the economic core areas in the coastal region while those of the top 100 banks are relatively dispersed, with more emphasis on Beijing and Shanghai (Figure 3). Many institutions established by smaller banks are highly concentrated in Shanghai, Beijing, Shenzhen and Guangzhou.

[insert Figures 2-4 about here]

The locational patterns of representative offices, branches and sub-branches are

different. Representative offices, whose task is to collect information and seek business opportunities, are more concentrated in Beijing, Shanghai, and Guangzhou (Figure 4). The two major headquarters of the PBC are located in Beijing and Shanghai, and Guangzhou is the location of one of its nine regional headquarters. Foreign banks can benefit from informational externalities by locating themselves close to the PBC. Branches conducting foreign or local currency business are dispersed along the developed coastal cities. Sub-branches, which are strongly attached to branches, are largely agglomerated in the major cities like Shanghai, Beijing, Tianjin, and Shenzhen. During the post-WTO period, the Yangtze River Delta has become a favored region for foreign banks. Foreign banks in Shanghai can serve the larger hinterland of the Yangtze River Delta and its neighboring regions.

EXPLANATION OF THE LOCATIONAL DISTRIBUTION OF FOREIGN BANKING IN CHINA

Due to the data available, we could only model the location choice of foreign banks in China between 1996 and 2006. Table 5 presents Pearson's correlation coefficients for the explanatory variables. We transform the interval scale variables into their logarithmic forms. As expected, lnNFB, lnTRADE and lnFDI are highly correlated, while lnNFB and lnTRADE are moderately correlated with RMB and NFC. Other explanatory variables are not strongly related to each other. To mitigate the multicollinearity issue of estimates, we introduced the interaction of lnTRADE and lnFDI in the model and separately tested the significance of lnNFB and lnTRADE*lnFDI.

[insert Tables 5-6 about here]

Location determinants of foreign banking in China: follow the competitor and customers

The conditional logit model estimates from the full sample are reported in Table 6. The LM tests show the significance of the models, with Pseudo R^2 of 0.3996. Considering the correlations between some variables, we applied four model specifications to test the significance of explanatory variables. The coefficients of OFB, which is applied to control the influence of earlier location decisions of a parent bank on its current location choice, are negative and significant at the 1% level in all model specifications (including other model specifications listed in Tables 7 and 8). This suggests that foreign banks are likely to locate their new business entities in cities without existing investment by the parent bank.

The coefficient of lnNFB is positive and highly significant in models 1 and 2, indicating that foreign banks without existing investment in China are more likely to enter a city with more banking institutions established by other foreign banks (Table 6). On the one hand, the ownership advantages of foreign banks may trigger oligopolistic locational reactions by 'following their competitors' to major Chinese cities such as Beijing, Shanghai and Shenzhen, which leads to the spatial agglomeration of foreign banks. On the other hand, foreign banks mimic the location behavior of first-movers due to information asymmetry and the corresponding uncertainty of doing business in China. The information spillovers between foreign banks may result in their agglomerating in major Chinese cities. The above findings suggest that foreign banks are likely to invest in several different cities, and the subsequent agglomeration of foreign banking institutions in Chinese cities is largely the consequence of the investment decisions of different foreign banks.

There is evidence to suggest that foreign banks 'follow their customers' to specific Chinese cities. The coefficient of the interaction of lnTRADE and lnFDI is positive and highly significant in models 1 and 3, implying that foreign banks are

inclined to set up bases in cities with a large volume of international trade or had inflows of utilized FDI in previous years (Table 6). Foreign companies involved in international trade or investment in China are potential customers for foreign banks. China has been the major destination for FDI and the top international traders since the early 1990s, second only to the US and Japan in recent years. Foreign banks have the incentive to maintain the established business-client linkages with their home countries' companies with extensive trade and investment in China.

The impact of ownership advantages derived from the size of banks on location choices are reported in Table 7. All OFB and lnNFB coefficients are significant at the 1% level and at higher values in the models of the top 100 banks than those of the smaller banks. With significant ownership advantages, larger foreign banks are more likely to choose different cities to set up establishments for their sequential investment in China. They are also more likely to follow their major competitors in their location choices, probably due to the oligopolistic locational reactions. Smaller foreign banks are more likely to 'follow their customers' to Chinese cities, which is illustrated by the more significant and larger coefficient value of lnTRADE*lnFDI in the models for smaller banks. By maintaining the existing business-client ties developed in their home countries, smaller banks may benefit from ownership and internalization advantages in host countries. Thus, the hypotheses that larger banks use the 'follow the competitor' strategy (H_1) and smaller banks use the 'follow the customer' strategy (H_2) are supported.

[insert Table 7 about here]

Beyond the follow the competitors and customers strategies, foreign banks also pursue local banking opportunities. Foreign banks are more likely to enter cities with larger total banking deposits and loans, as indicated by the positive and highly significant coefficients of lnLOAN in all model specifications (Table 6). Higher volumes of deposits and loans in a city indicate a larger potential banking market and more profit-making opportunities for foreign banks. Other foreign banks may mimic the location distribution of their counterparts, resulting in further spatial agglomeration of foreign banks. The highly significant positive coefficients of lnLOAN in all four models for the top 100 banks further illustrate that larger banks are more likely to set up in cities with abundant local banking opportunities (Table 7). Larger banks possess significant ownership advantages and have the capital to explore and compete with the long established domestic state-owned banks in China. They are willing to invest in areas as long as their investment is justified by potential banking opportunities. Thus the third hypothesis of the business-seeking strategy by larger foreign banks (H_3) is accepted. The above findings are comparable with the hypotheses outlined by ENGWAL and WALLENSTAL (1998) and WILLIAMS (1997, 2002) in the banking industry.

Moreover, the statistical results may provide partial support for the argument concerning the informational advantages for foreign banks. The national and regional financial centers in China are attractive locations for foreign banks when the agglomeration effects of banking institutions (follow the competitor and customer) are disregarded. Both coefficients of NFC and PBC are positive and highly significant in model 4 but insignificant in model 1 when lnNFB and lnTRADE*lnFDI are included (Tables 6-7). The geographical proximity to China's central bank allows foreign banks to have easy access to the decision-makers about financial policy and establish local business networks. The informational externalities can significantly moderate the business risks encountered by foreign banks. Meanwhile, foreign banks may benefit from the information spillovers derived from the agglomerations of foreign banks in

the financial centers and this could be the reason for the insignificant coefficients in model 1.

Formal institutional environment and locations of foreign banks

The gradual deregulation policies implemented by the CBRC may influence the location choices of foreign banks in China. The institutional variable of ACCESS is significant at the 1% level and positive in model 4 when the influence of following the competitors and customers (lnNFB and lnTRADE*lnFDI) are not considered (Tables 6-7). This rather *unexpected result* implies that the location choice of foreign banks is more determined by the agglomeration effects generated by their counterparts than the CBRC's policies on first-mover cities for foreign banks. Before we draw a conclusion on this crucial point, we should have a closer look at the coefficients in the other model specifications. The coefficients of RMB are expectedly significant at the 1% level in all model specifications (with the sole exception of Model 3 in smaller banks), implying that foreign banks are likely to pursue a local currency business-seeking strategy in their location decisions. In addition to fewer regulatory restrictions from the CBRC, foreign banks may encounter lower transaction costs (due to their familiarization with the local institutional environment) in conducting business in these first-mover cities. The above provides a *prima facie* case that the location choices of foreign banks are determined more by the agglomeration effects generated by their counterparts and the CBRC deregulation policies in RMB banking but less so for the first-mover cities policy *per se*.

We examined the potential impacts of the institutional environment on the location choice of foreign banks in China further by referring to the specific form of their business units. There are four interesting points that could provide some insights into the relationship between the form of business and the institutional environment in the location choices of foreign banks in China.

[insert Table 8 about here]

First, foreign banks tend to implement the following the competitor and customer strategies in their location choices for branches and sub-branches but this is less likely in the case of representative offices. This is illustrated by the significant coefficients of lnNFB and lnTRADE*lnFDI in the models for branches or sub-branches but the only marginally significant to insignificant coefficients in the models for representative offices (Table 8). Foreign banks generally have to commit abundant capital and considerable business risks to operating branches and sub-branches. According to the *Rules for Implementing the Regulation of the People's Republic of China Governing Foreign-funded Financial Institutions* issued by the CBRC in 2004, a foreign bank must issue a non-callable allocation of a minimum of RMB100-500 million or an equivalent amount in convertible currencies as operating capital for each branch, depending on the scope of its business. The minimum operating capital for a branch was reduced to RMB100 million by the CBRC in 2006 (but a foreign bank must have maintained a representative office in China for at least two years before being allowed to apply to set up a branch), according to the *Regulations of the People's Republic of China on Administration of Foreign-funded Banks*. In addition to following their customers and locating in cities with plenty of banking opportunities, it is logical for foreign banks to mimic the location choices of their major competitors to offset unnecessary business risks in an environment of asymmetrical information. The third hypothesis of the business-seeking strategy of branches and sub-branches (H_3) is thus accepted.

Second, foreign banks are likely to pursue informational externalities in their location choice for representative offices. This is illustrated by the positive, significant

and larger coefficients of both NFC and PBC in model 4 for representative offices when the effects of following the competitor and customer are not considered (Table 8). As mentioned previously, representative offices aim to collect information and provide advisory services to foreign enterprises in China. It is logical for foreign banks to locate their representative offices in major financial centers to reap the informational advantages of being spatially close to the headquarters of China's central and domestic commercial banks. The fourth hypothesis of the information-seeking strategy of representative offices (H_4) is thus accepted. This finding enhances the existing literature, such as MAGRI *et al*. (2005), by specifying the determinants of the different business forms foreign banks take.

Third, foreign banks are more likely to open representative offices in cities which allow them to conduct RMB business, while they tend to locate their branches or sub-branches in first-mover cities opened up to foreign banking services. The coefficients for RMB are significant in all of the representative office models (especially Model 1), while the coefficient for ACCESS is positive and highly significant only in Model 4 for branches and sub-branches when the effects of follow the competitor and customer are disregarded (Table 8). This finding could be partially explained by the fact that the location of foreign banks and their provision of banking services to local currency businesses are largely determined by the restrictions stipulated by the CBRC in a relatively small number of open cities. This is especially the case before China's WTO accession when foreign banks in the Shenzhen special economic zone were only allowed to conduct *Renminbi* business in 1998. The sixth hypothesis of local currency business-seeking by representative offices (H_6) could be accepted.

Fourth, it appears that the agglomerating effect of banking institutions again has a larger impact on the location choice of foreign banks than the institutional variable of first-mover cities (Table 8). The coefficient of ACCESS is only significant in Model 4 for branches and sub-branches when follow the competitors and customers (lnNFB and lnTRADE*lnFDI) variables are not considered. This provides further evidence that the agglomeration effect is more important as a determinant of the choice of location than first-mover advantages for foreign banks in China. One possible explanation is that foreign banks in China use the agglomeration economies and the affiliated informational externalities to mitigate their business risks in China. The availability of skilled labor and external economies through product and market information in major cities are vital for the Marshallian type of spatial concentration of specialized industries (KRUGMAN, 1991a). Proximity to banks allows bankers to conduct brief but frequent face-to-face communication and this could facilitate the exchange of vital information concerning the newly implemented banking regulations by the CBRC (see also TORRE, 2008). This explanation is consistent with the proposition that agglomeration could develop as a result of firms pursuing informational externalities (WOOD and PARR, 2005; VICENTE and SUIRE, 2007).

We nonetheless have to be aware of the potential pitfalls of this strong argument, partly due to the limitations of the selected institutional variables. Our two major variables for the institutional environment are ***geographically based***: cities opened to foreign banking businesses in the case of ACCESS and cities opened to local currency banking in the case of RMB. The CBRC's deregulation policies could have a bigger impact on the ***scale*** and ***pace*** of foreign bank investment and the variety of banking ***products*** than the location choices of foreign banks alone. This is especially the case since the late 1990s, when most coastal cities were already opened up to foreign banks.

Foreign banks are profit-oriented and thus tend to select coastal cities already open to foreign banks (first-mover advantages), which are also those areas with more banking opportunities. Foreign banks aim to penetrate and conquer the lucrative segments of the (urban) banking market rather than 'race to the bottom of the pile' with the state-owned banks and rural credit co-operatives in the vast but razor-thin profit-margin banking market in rural areas. Instead of aiming for the blanket coverage of banking services over the whole country geographically, foreign banks strategically target the highly lucrative market of private banking business in China, which has an average profit rate ten times higher than that of the European and American retail banking businesses. According to the Boston Consulting Group's report, the number of households with more than US$1 million in liquid assets in China had increased from 124,000 in 2001 to 310,000 by the end of 2006. It is expected that this number will double by 2011 (*China Daily*, 31 October 2007). Foreign banks realize that they are able to provide more sophisticated personal banking products than Chinese banks to the new middle class and entrepreneurs (who are service rather than price elastic) in the first-mover cities, even though publicly listed state-owned commercial banks are aggressively improving their services. (TIBG) The concentration of foreign banks in these first-mover cities creates an agglomeration effect over time and this could offset the sensitivity of the geographically-based institutional variables used in this paper. Based on the above discussion, the fifth hypothesis of first-mover city-seeking by branches of foreign banks (H_5) can only be partially accepted.

If the above arguments hold any water, the two locationally-based variables, especially the first-mover cities variables (ACCESS), for institutional environments are surely unable to reveal the full impact of the deregulation of banking product provisions (such as the QFII, Qualified Foreign Institution Investors, which allows foreign financial institutes to invest in local currency and local securities markets) on the location choice of foreign banks. It is unfortunate that we are unable to identify a reliable dataset to examine this proposition further. This could be an important area for further research.

SUMMARIES AND DISCUSSIONS

This paper aims to contribute to the existing literature by examining two major propositions concerning the location choices of foreign banks based on their different business forms and bank assets in a major transitional economy, that of China. In addition to the follow the competitor and customer proposition derived from Dunning's eclectic paradigm (GRAY and GRAY, 1981; PETROU, 2007), we introduced two institutional variables in the form of first-mover cities and local currency banking to examine the potential impacts of the liberalization policies implemented by the regulatory authority (CBRC) on the location choices foreign banks make in China. We also divided the dataset into two panels to identify the potential differences between business forms (branches and sub-branches versus representative offices) and bank assets (small banks versus large banks) to test the six research hypotheses, that choices are determined by: follow the competitors and customers, business-seeking, information-seeking, first-mover cities-seeking, and local currency business-seeking.

There is strong evidence from the conditional logit regression models to suggest different types of foreign banking institutions display distinct location patterns. Smaller foreign banks (partly due to lower ownership advantages) tend to pursue 'follow the customer' strategy to lower investment risks and maintain business-client networks in their choice of Chinese cities. Large foreign banks have ownership advantages and tend to mimic the location choices of their major competitors and

select cities with large potential banking opportunities. To collect vital and up to date information, foreign banks tend to locate their representative offices in Beijing and Shanghai with their informational externalities, or other first-mover cities (initially special economic zones) to open up local currency banking and reap the locational advantages created by the deregulation of the Chinese banking industry. These findings are not only comparable with the general hypotheses outlined in the existing literature, such as ENGWAL and WALLENSTAL (1998), WILLIAMS (1997, 2002), and MAGRI *et al*. (2005), but also improve on them by specifying the determinants of different business forms and size of foreign banks.

As a transitional economy, China has gradually relaxed its geographical and customer restrictions on foreign banking operations. Right after the open-door policy, China allowed foreign banks to set up representative offices in Beijing and later allowed foreign banks to establish business operations in special economic zones and other coastal cities. Progressively, the geographical restrictions on foreign banks were fully lifted. From 1996, the Chinese government has allowed foreign banks in Shanghai to conduct *Renminbi* business, and this was expanded to 25 cities by November 2006. Foreign banks were guaranteed phased access to the Chinese market with the elimination of all restrictions on their business activities by the end of 2006. We expected a significant institutional impact on the location choices of foreign banks in China.

There is, however, ***no*** crystal clear evidence to support the proposition that foreign banks tend to set up operations in first-mover cities in the opening up of the banking sector to reap any locational advantages created by the deregulation of the Chinese banking industry. The statistical evidence actually suggests that location choices of foreign banks are more determined by the agglomerating effects generated by their major competitors and the CBRC deregulation policies in RMB banking, though less so for the first-mover cities policy *per se*. This finding could be reconciled partially by the limitations of the location-bounded institutional variables. The CBRC's deregulation policies on first-mover cities could have a bigger impact on the scale and pace of foreign bank investment and the variety of banking products than the location choices of foreign banks. This is especially the case since the late 1990s, when most coastal cities opened up to foreign banks.

Notwithstanding the potential limitations of the two variables used to reveal the geographical elements of the institutional environment, there is a *prima facie* case for the importance of the agglomerating effect of banks and the deregulation policies in RMB banking in the location choice of foreign banks in China. The CBRC's policies' geographical constraints may no longer be central to the location choice of foreign banks after three decades of gradual deregulation in the banking industry. This could be the case as most (coastal) areas that could provide potentially lucrative banking opportunities for profit-oriented foreign banks have been open for a long time. In a transitional economy like China, foreign banks encounter significant business risks and agglomeration economies would lower the information costs and even assist their survival during their early period of operating. The circular causation for the geographical agglomeration of foreign banks and bankers, which is generated by forward and backward linkages, leads to increasing returns to scale and even a snowball effect that leads to more foreign banks becoming 'locked in' to these first-mover cities. The institutional environment can thus be revealed more effectively through variables that can capture the potential impacts of CBRC's deregulation policies on the form of RMB currency service provision and various sophisticated financial products.

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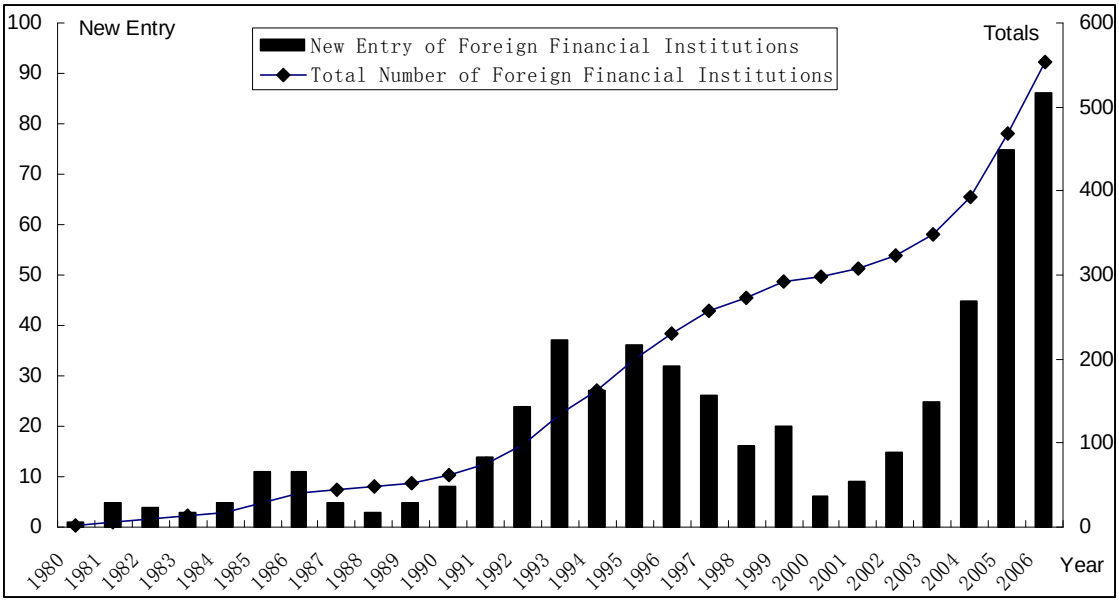

Figure 1 Foreign Banking Institutions in China during 1980-2006
Sources: China Society for Finance & Banking (2007)

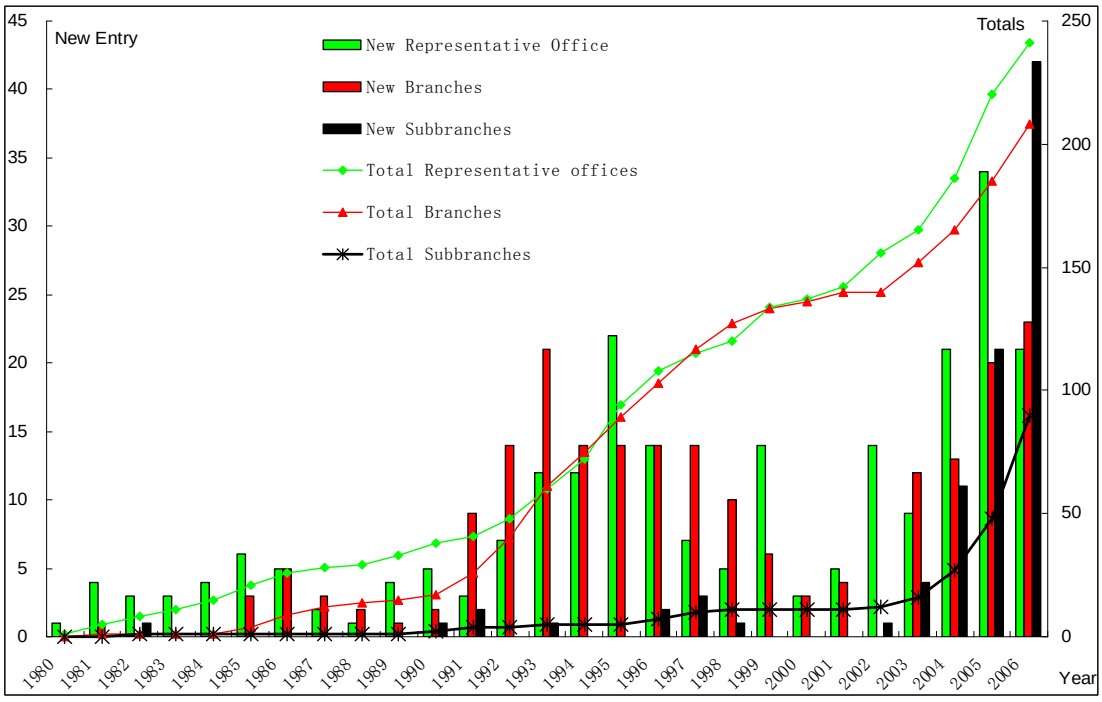

Figure 2 Representative Offices, Branches and Sub-branches Established by Foreign Banks in China during 1980-2006
Sources: China Society for Finance & Banking (2007)

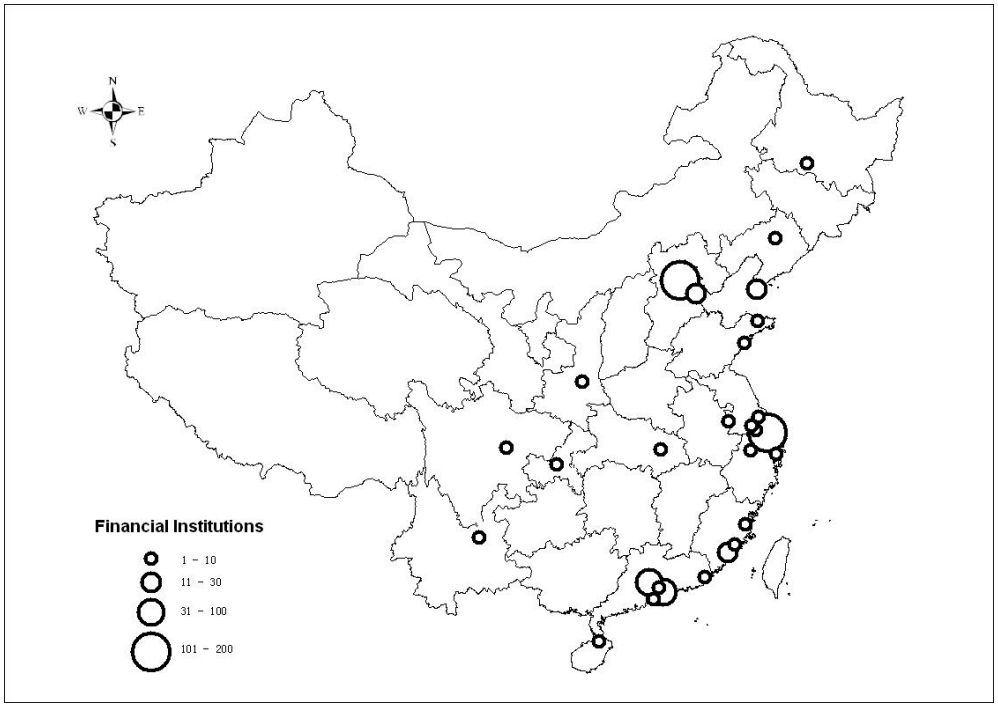

Figure 3 Location Distribution of Foreign Banking Institutions in China (2006)

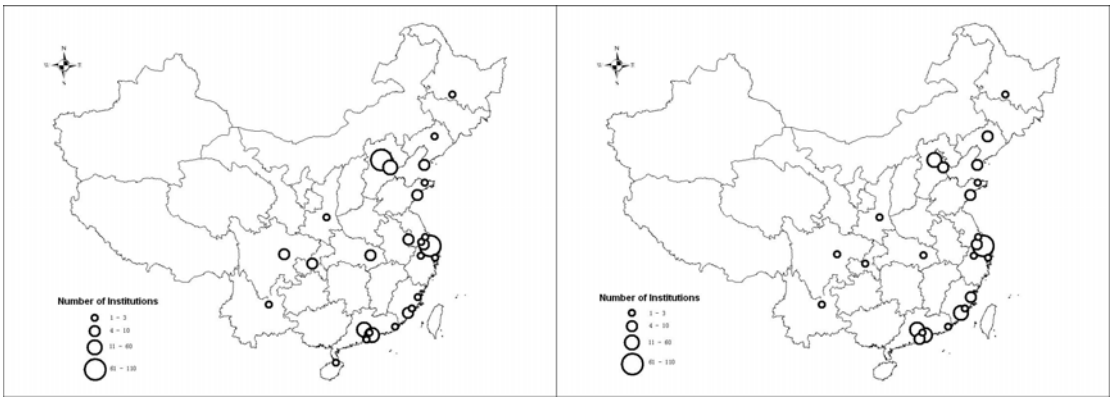

Figure 4 Location Distribution of Foreign Banking Institutions Established by Top 100 Banks (Left) and Smaller Banks (Right)

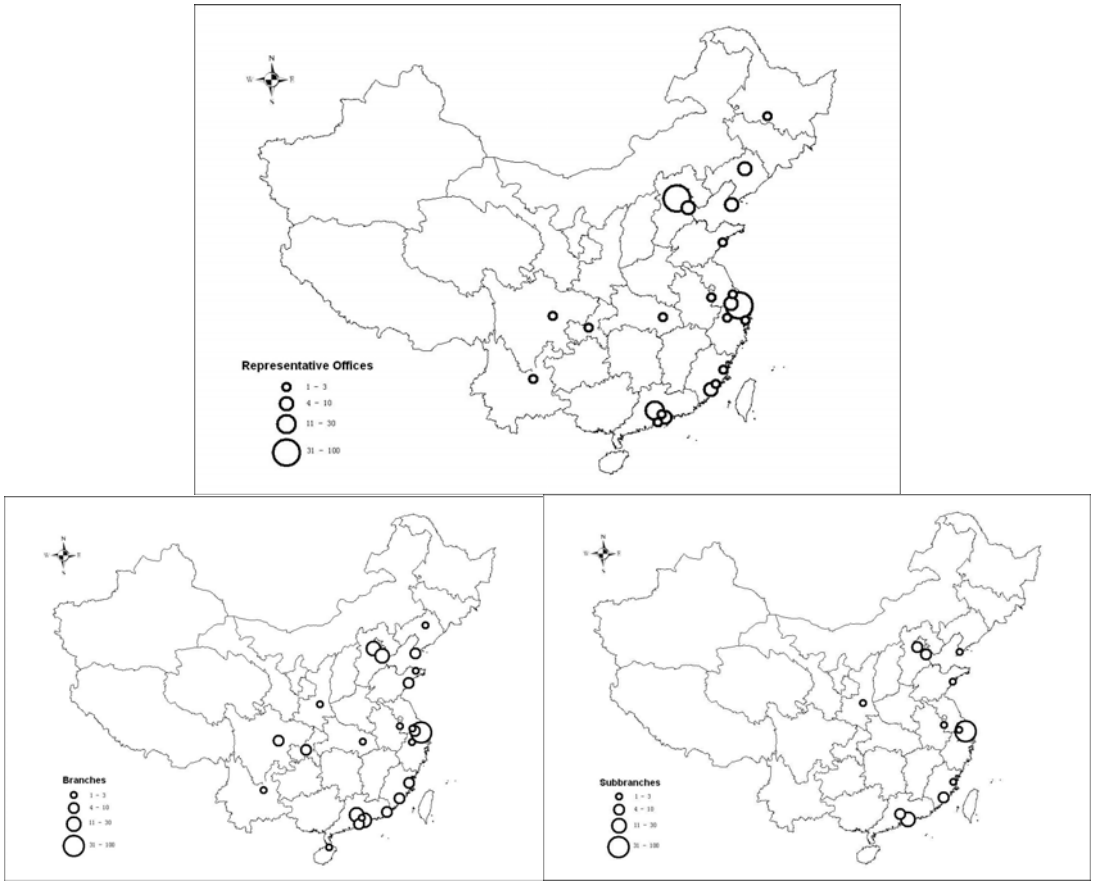

Figure 5 Location Distribution of Representative Offices (Upper), Branches (Bottom left) and Sub-Branches (Bottom right) in China (2006).

Table 1 Definitions and expected signs of explanatory variables

Variable	Definition	Expected signs
ONF	Number of existing foreign banking institutions from the same parent bank in Chinese cities in the previous year	
PNF	Number of existing foreign banking institutions from other parent banks in Chinese cities in the previous year	+
CTR	International trade volume in a Chinese city	+
FDI	Realized amount of foreign direct investment in a Chinese city	+
BDL	Total banking deposits and loans in a Chinese city	+
CPE	Number of years for which foreign banks were allowed to establish business operational entities in a Chinese city	+
RMB	Number of years for which foreign banks in a Chinese city were allowed to conduct *Renminbi* business	+
NFC	Dummy variable for the national financial centers of Beijing and Shanghai	+
RFC	Dummy variable for cities hosting the nine regional branches of the PBC	+

Table 2 Summary of foreign banking institutions in 2006

Institutions	Total	Entry timing		Investing banks		Country of origins		
		Pre-WTO (1979-2001)	Post-WTO (2002-2006)	Top 100 banks	Smaller banks	Great China Diaspora	Asia	Europe and North America
Representative Office	240	142	98	82	158	33	85	122
Branch	207	139	68	129	78	72	53	82
Sub-branch	90	11	79	62	28	53	7	30
Headoffice	11	11	0	1	10	4	4	3
Total	548	303	245	274	274	162	149	237

Sources: Authors' computation based on data from *Almanac of China's Finance and Banking 2007*.

Note: The Great China Diaspora include Hong Kong, Macau, Taiwan and Singapore; Asia includes South Korea, Japan and other Southeast Asian countries

Table 3 Entry patterns of foreign banking institutions in different Chinese cities, 1980-2006

City	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Beijing	117	●	4●	3●	3●	2●	3●	3●	●		2●	4●	2●	3●	4● ■	2●	3● 4■	3● 4■	6● 3■	2● 2■	8● 2■		● ■	5●	2● 3■	4● 2■	4● 6■	5● 9■
Shanghai	193								●	●		■	8■	2● 2■	4● 5■	7● 5■	8● 4■	4● 6■	● 6■	3● 7■	4● 2■	3● ■	4● 2■	6●	5● 9■	14● 7■	19● 15■	9● 18■
Tianjin	21													2■	6■	■	3● ■	●	■		■				■		2■	2■
Shenyang	7														●			●								■	●■	●■
Dalian	14						●	●							2■	2■	●■	2■	●								●	2■
Qingdao	10													2■		■		●■							■	■	■	2■
Yantai	2																											2■
Nanjing	4													■				●					■		■			
Suzhou	10																	●	■					2●		■	●■	● 2■
Wuxi	2																											2■
Nantong	1							●																				
Hanzhou	5										●															■	●■	■
Ningbo	3														●■	■												
Fuzhou	7													● 3■		●						■						■
Xiamen	20						● 3■	3■			■	● ■	● ■		■				■						2■			● 3■
Guangzhou	45					2●								3■	3 ■	2● 5■	● ■	●	● ■	■	● ■		●	● ■		2● 2■	4● 4■	● 6■
Shenzhen	46		■	■			● 2■	2■	2■	■		■			6■		● ■	■	■	■	■				●	●	6■	● 6■	● 7■
Zhuhai	6					■			■					■	■		■											
Shantou	4												■	2■			■											●	
Dongguan	3																									●	●	■
Haikou	1									■																		
Harbin	1																											●
Wuhan	5																2●	●■	■									
Kunming	2																●	■										
Chongqing	6																●		■						■		2■	■
Chengdu	9																●	●■								■	3■	2■
Xi'an	3																					■						2■

Notes: ●: Representative office; ■: Branch, sub-branch and head offices

In the case of more than one representative office, or branches or sub-branches, a number is set before the symbol.

Source: China Society for Finance & Banking (2007)

Table 4 Entry pattern of foreign banking institutions into China, 1980-2006

City	Total	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Hong Kong	127		■	■			●2 ■	2■	■	●■		3■	2■	●7 ■	● 10■	2● ■	2● 3■	2● 2■	4■		3● 2■	●2 ■		■	5■	3● 11■	3● 14■	32■
Japan	80	●			●	3●	●■	●■	●■	●			●2 ■	●3 ■	2●	5● 2■	9● 4■	4● 2■	● ■	●	■			2●	3●	6●3■	7●2■	2●4■
USA	49					■		●■		■		●	2■	2●	2● 2■	●	2■	●3 ■	●2 ■		2■		●	2●	●■	●■	3●6■	3●5■
UK	31		●				■	●■	■		●		■	2■	●			●	●■	■	2●				■		2●7■	5■
South Korea	27													2●	■	2■	2■	2■	■			■		●	4■	●2■	6■	2■
Germany	25		●				●	●							■	●2 ■	2●	●■	2●	●3 ■	●	●	●			2■		3■
France	25						●				●■		■	3■	2■	2■	■	2● 2■	●■	●■					■		2●	●■
Singapore	20						■						2■		3■	■		2● ■	2■	■			●■			2■		3■
Netherlands	19											●			■	●■	2● ■	●		2■					■	■	3■	4■
Italy	18			●				●	●			3●				●	■		●■	●					■	2●	3●	●
India	11																								●	2●	2●■	4●■
Canada	10		●	●												2■		■	■				●			●		2■
Switzerland	10														●	■			●		●			●		■	3●	●
Thailand	9													■	■		3●	2■	■								■	
Spain	8						●								●		●									●	3●	●
Australia	7						●						●		2■	●	●											●
Taiwan	15															■			■				●	8●	●■	■		■
Belgium	6				●													■		2■	■		■					
Russia	6										●							●			●					●		2●
Sweden	6			●	●	●																●					2■	
Philippines	5														●■		●						■		■			

Notes:

●: Representative office

■: Branch, sub-branch and head-office

In the case of more than one representative office, or branches or sub-branches, a number is set before the symbol.

This table only includes foreign banks with five or more institutions established in China by 2006.

Source: China Society for Finance & Banking (2007

Table 5 Correlation coefficients among explanatory variables

	ONF	lnPNF	lnCTR	lnFDI	lnBDL	CPE	RMB	NFC	RFC
ONF	1.00								
lnPNF	0.44	1.00							
lnCTR	0.39	0.73	1.00						
lnFDI	0.31	0.60	0.79	1.00					
lnBDL	0.33	0.48	0.59	0.53	1.00				
CPE	0.22	0.38	0.60	0.43	0.29	1.00			
RMB	0.47	0.53	0.59	0.46	0.53	0.46	1.00		
NFC	0.38	0.61	0.37	0.35	0.46	0.07	0.33	1.00	
RFC	0.02	0.07	0.00	0.15	0.13	-0.23	0.12	-0.15	1.00

Table 6 Estimations from the conditional logit model for foreign banking institutions established during 1996-2006

Variables	Foreign Banking Institution			
	Model1	Model2	Model3	Model4
ONF	-0.524***	-0.517***	-0.494***	-0.456***
lnPNF	0.439***	0.553***		
lnCTR*lnFDI	0.015***		0.019***	
lnBDL	0.574***	0.705***	0.857***	1.097***
CPE	-0.029	0.020	0.025	0.102***
RMB	0.098***	0.121***	0.083***	0.112***
NFC	0.384	0.446	1.001***	1.372***
RFC	0.125	0.251	0.397*	0.658***
# of observation	348	348	348	348
Log likelihood	-724.16	-728.85	-729.20	-738.46
LM χ^2	963.83	954.44	953.76	935.23
Pseudo R^2	0.3996	0.3957	0.3954	0.3877

Note: ***, **, ** denote significance at the 1%, 5% and 10% levels, respectively.

Table 7 Estimations from the conditional logit model for foreign banking institutions established by top 100 banks and smaller banks during 1996-2006

Variables	Smaller Banks				Top 100 Banks			
	Model1	Model2	Model3	Model4	Model1	Model2	Model3	Model4
ONF	-0.465***	-0.471***	-0.445***	-0.424***	-0.617***	-0.608***	-0.581***	-0.538***
lnPNF	0.415**	0.540***			0.473**	0.571***		
LnCTR*lnFDI	0.019***		0.022***		0.012*		0.017**	
LnBDL	0.446	0.661***	0.715***	1.040***	0.714***	0.782***	1.021***	1.194***
CPE	-0.039	0.022	0.018	0.103***	-0.024	0.017	0.029	0.099***
RMB	0.077**	0.106***	0.062*	0.097***	0.132***	0.150***	0.117***	0.142***
NFC	0.308	0.354	0.936**	1.270***	0.492	0.598	1.109**	1.496***
RFC	-0.334	-0.209	-0.058	0.200	0.542	0.666**	0.807***	1.073***
# of Obs.	185	185	185	185	163	163	163	163
Log likelihood	-371.44	-375.01	-373.68	-379.58	-348.28	-349.71	-351.19	-354.84
LM χ^2	539.44	532.31	534.96	523.17	433.27	430.41	427.45	420.15
Pseudo R^2	0.4207	0.4151	0.4172	0.4080	0.3835	0.3810	0.3783	0.3719

Note: ***, **, ** denote significance at the 1%, 5% and 10% levels, respectively.

Table 8 Estimations from the conditional logit model for representative offices and branches or sub-branches established during 1996-2006

Variables	Representative Offices				Branches or Sub-branches			
	Model1	Model2	Model3	Model4	Model1	Model2	Model3	Model4
ONF	-2.534***	-2.545***	-2.521***	-2.522***	-0.317***	-0.310***	-0.293***	-0.255**
lnPNF	0.381	0.438*			0.412**	0.560***		
lnCTR*lnFDI	0.018*		0.020*		0.016***		0.019***	
lnBDL	0.763*	0.968***	1.050***	1.318***	0.540**	0.654***	0.789***	1.034***
CPE	-0.084	-0.003	-0.035	0.070	-0.001	0.035	0.053	0.119***
RMB	0.095**	0.110**	0.080*	0.096**	0.067*	0.095***	0.054	0.093***
NFC	1.033	1.272*	1.596**	1.992***	0.116	0.112	0.705*	1.034***
RFC	0.331	0.552	0.566	0.862**	0.084	0.158	0.355	0.586**
# of observation	142	142	142	142	206	206	206	206
Log likelihood	-219.87	-221.29	-221.06	-222.99	-483.85	-487.49	-486.74	-494.37
LM χ^2	544.54	541.68	542.15	538.29	460.19	452.90	454.41	439.15
Pseudo R^2	0.5532	0.5503	0.5508	0.5469	0.3223	0.3172	0.3182	0.3076

Note: ***, **, ** denote significance at the 1%, 5% and 10% levels, respectively.